



Description of a neotype and designation of four lectotypes from Borneo in the genus *Curculio* (Coleoptera: Curculionidae)

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Abstract

A neotype is described for *Balaninus sellatus* Marshall, originally based on a unique female specimen, which will be replaced by a male specimen; and four lectotypes are designated for the following species: *B. analis* Marshall, *B. discreticoxis* Marshall, *B. imitator* Marshall, and *B. quincunx* Marshall. All species are now in the genus *Curculio* Linnaeus. Original type specimens were stolen on the Paris Metro.

Key words: Borneo, Coleoptera, Curculionidae, Curculionini, *Curculio*, lectotypes, neotype

Introduction

Guy A. K. Marshall (1919) described the *Balaninus* (*Curculio*) occurring in Malaysian Borneo, then called British Borneo, in 1919. The specimens were obtained from the collections of Mr. G. E. Bryant, Mr. R. Shelford from the Oxford and Cambridge Museums and Dr. A. R. Wallace.

In the course of reviewing the Curculionini of the World I borrowed holotype specimens from the Natural History Museum London to compare with specimens loaned to me by Dr. Charles W. O'Brien (Green Valley, AZ). The species borrowed consisted of the following: *Balaninus analis* Marshall, *B. discreticoxis* Marshall, *B. imitator* Marshall, *B. quincunx* Marshall and *B. sellatus* Marshall. All species are now in the genus *Curculio* Linnaeus. Of the taxa borrowed only *C. sellatus* was based on a unique type specimen, a female and probably the only specimen known in the world at the time. The other four species have syntypes in the British Museum of Natural History (BMNH). After studying the specimens and taking pictures it was time to return the specimens to the museum.

I planned a trip to Europe to visit several museums and so I intended to return the types when visiting the BMNH. Originally, I intended to visit the Museum nationale d'Histoire naturelle in Paris (MNHN) as well, so I booked my flight to arrive in Paris and then to travel to London. After booking my flight to Paris I was informed that a visit to the Museum would not be possible as the curator, Dr. Hélène Perrin, would be away from the Museum at the time I had planned to travel to Europe. My friend Gil Challet and I were traveling together and when he arrived at Charles De Gaulle airport we took the Paris Metro to Paris North train station Gare du Nord where we would take the Eurostar to London. While on the Metro it made a stop to pick up passengers and we were seated near the door with our luggage and with my briefcase sitting next to me in the seat. When we stopped, a man got on board and dropped his keys at my feet, this took my attention away from my briefcase and his partner in crime snatched my briefcase and ran. By the time we had realized what had happened he was gone in just a few seconds. In the briefcase were several boxes of insect specimens, most notably the box containing the type specimens mentioned above. Upon arriving at the train station we reported the incident to the Paris Police. I am sure the thieves were only interested in the computer and any money or documents that might have been in the briefcase and no doubt discarded the valuable insects. We subsequently proceeded to the BMNH and reported the unfortunate incident to Max Barclay, curator of Coleoptera.

While at the BMNH I chose a specimen for each missing holotype from syntypes in the museum's collection, except for *C. sellatus* which was unique. Fortunately, in my collection there was a male specimen of *C. sellatus* that I had discovered in the collection of Dr. Charles O'Brien. He had two male specimens and I retained one and sent him the other. The specimen in my collection will be designated as the neotype and sent to the BMNH. As far as I know there are now only two specimens of *C. sellatus* known in the world.

Materials

The specimens treated in this paper are keyed in Marshall (1919), all are illustrated therein except for *C. analis* and *C. imitator*. All the species are adequately described by Marshall (1919) indicating the distinguishing characteristics to separated the species. In this treatment a brief diagnosis and Photoshop-edited photographs are provided for each taxon of the specimens taken before the theft and not of the lectotype designated specimens.

Collections

BMNH	British Museum of Natural History (London, United Kingdom)
CWOB	Charles W. O'Brien (Green Valley, AZ, U.S.A.)
MNHN	Museum national d'Histoire naturelle (Paris, France)

Curculio analis (Marshall)

Balaninus analis Marshall 1919: 387

Type material: **Lectotype** 1 male (present designation) "Puak , /Sarawak / G. E. Bryant / 30.v.14" and "Balaninus / analis Mshl. / COTYPE" and **LECTOTYPE** "*Curculio analis* (Marshall) des. Pelsue 2009" (BMNH).

Syntypes: 4 males "Kuching. / J. E. A. Lewis. / 1910-116."

1 female "Type / (BM red-rimmed type disc)" and "Kuching. / J.E.A. Lewis. / 1910-116." and "J.E.A.Lewis. / 1910-116." and "Balaninus / analis / Mshl / Type female"

8 females "Kuching. / J.E.A.Lewis. / 1910-116."

4 females "Kuching / 11.5.09, and "Kuching. / J.E.A.Lewis. / 1910-116."

Diagnosis: Male 4.0–5.3 mm long; piceous except for legs which are fuscous; rostrum more than half the body length in male, but longer than body in female, gradually emerging from frons, evenly deflexed from base to apex; pronotum with anterior basolateral macula with arms reaching past dorsal margin of eye in lateral view and just visible in dorsal view, consisting of tightly packed recumbent, clavate, cretaceous scales; basal margin of pronotum with lateral macula of similar scales and in dorsal view line up with basal fascia on elytra forming V with piceous scutellum set in middle of V. Mesoventral intercoxal process prominent. Elytra with submedian fascia of recumbent, clavate, cretaceous scales and distal vittae of cretaceous scales at apex on interval 1 along margin of crosshatch seta-like scales; venter clothed with decumbent, clavate, cretaceous scales with 2 pronounced tufts of seta-like cretaceous scales on apex of ventrite 5 with apical margin emarginated; metafemur exceeding apex of elytra, with medium tooth; mesofemur with basal margin of long white seta-like scales appearing like fringe of hair.

Differential diagnosis: This species can be confused with *Curculio deceptor* (Marshall), *C. interruptus* (Kirsch) and *C. imitator* due to the very similar fascia extending from the base of the pronotum to the base of the elytra forming a white V on a black background. It can be distinguished from *C. deceptor* by ventrite 5 having a pair of large tufts of hair on the apex and the second funicular antennomere as long as the first and appears less robust across the elytral humeri; mesofemur has a basal fringe of long setae forming a beard; basal macular median margin reaching interval 4, whereas in *C. deceptor* this reaches interval 5 of the elytra.

It can be distinguished from *C. interruptus* by the vestiture of the scutellum which is black in *analisis* and clothed with white scales in *interruptus*. With *C. imitator* the size is smaller, the anterior basilateral macular arm reaches only to the middle of the eye and is not visible in dorsal view, metafemur reaches apex of elytra or only slightly exceeds it; the basal pronotal macular median margin reaches to elytral interval 4 on both male and female; the mesofemur lacks the basal fringe of long setae-like hair that is present in *C. analis* males.

Distribution: This species is only known from Malaysian Borneo: Sarawak, Sabah, Kuching, and Puak.



FIGURES 1. *Curculio analis*, male; (a) dorsal habitus; (b) lateral habitus. Scale = 1.0 mm in this and all subsequent figures.

***Curculio discreticoxis* (Marshall)**

Balaninus discreticoxis Marshall 1919: 396

Type material: Lectotype 1 female (present designation): “W. Sarawak / G.Bryant Coll. / 1919-147.” and “LECTOTYPE *Curculio discreticoxis* (Marshall) des. Pelsue 2009” (BMNH).

Paralectotype: 1 female: “Mt. Matang. / W. Sarawak / G.E.Bryant / 13.2.14 / 1000 ft” and “G.Bryant Coll. / 1919-147.” (BMNH)

Additional material examined: MALAYSIA: SABAH: male “Crocker Range / Mt. TrusMadi / 3-26-2001 / Coll. Native.” (CWOB).

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FIGURES 2. *C. discreticoxi*, female; (a) dorsal habitus; (b) lateral habitus.

Diagnosis: Female 3.0–3.5 mm long; derm fuscous; female with rostrum longer than body, male with rostrum not as long as body, abruptly emerging from frons, not as broad as frons at base; prosternum with process separating procoxae, pronotum with median vittae of golden clavate scales flanked by shorter lateral vittae with two lateral macula at anterior margin, scutellum moderate sized clothed with golden scales; elytra with vittae on intervals 1–2 extending from scutellum to midpoint, two macula past midpoint straddling intervals 2–3 of golden scales, crosshatch setae long and piceous; legs long and willowy, metafemur exceeds

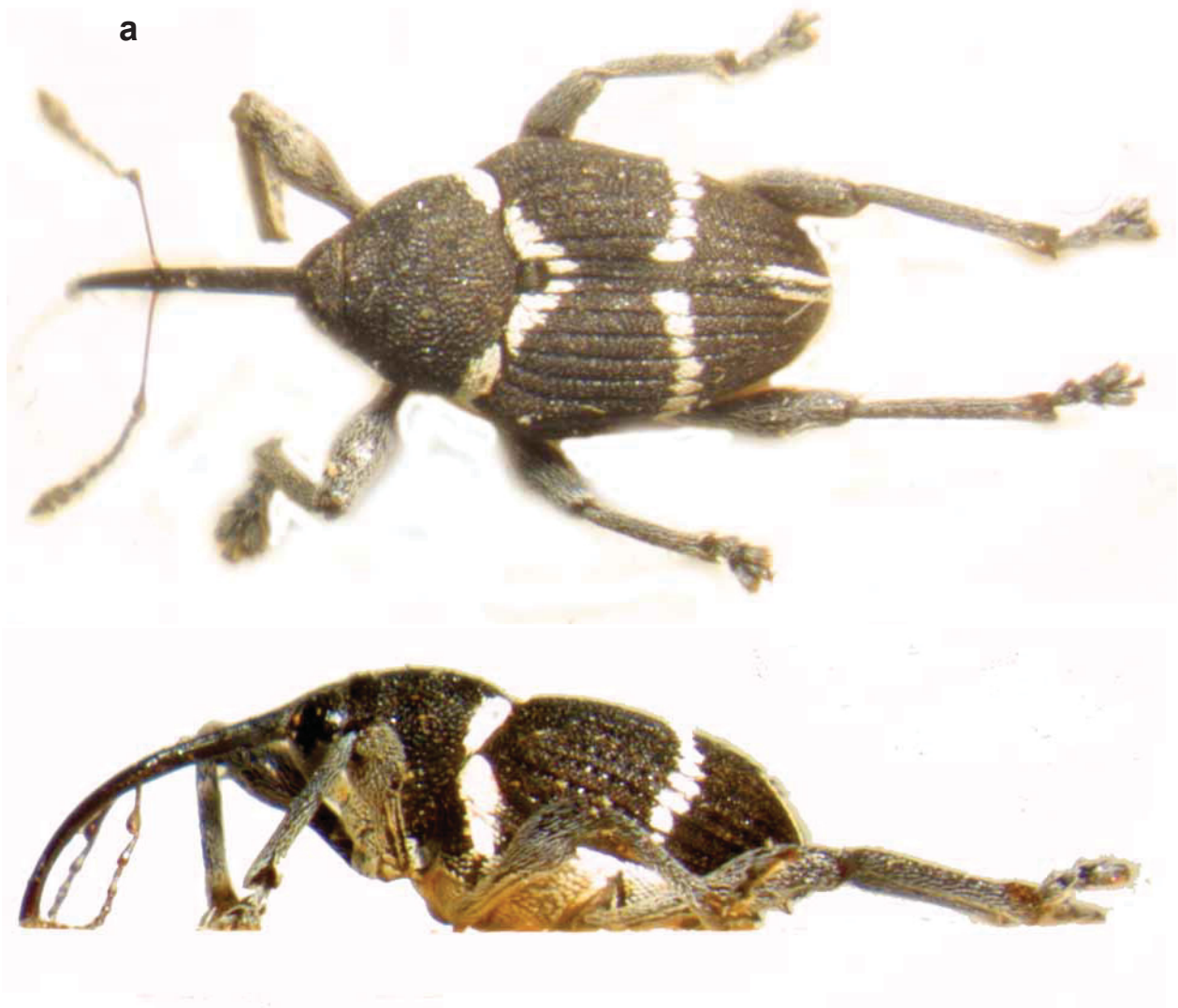
apex of elytra, tooth small, tibiae straight, female without uncus or murco, male with long inner bifid process extending well beyond tibial apex on metatibia; venter essentially glabrous except for lateral golden macula on ventrite 2.

Differential diagnosis: This species is very close to *Curculio nobilior* (Heller) and perhaps conspecific with this species as it also occurs on Borneo as well Sumatra and Banguay Heller (1927). It is distinguished from all other Curculionini by the prosternal process separating the procoxae.

Distribution: Only found on Malaysian Borneo.

Curculio imitator (Marshall)

Balaninus imitator Marshall 1919: 388



FIGURES 3. *C. imitator*, male; (a) dorsal habitus; (b) lateral habitus.

Type material: **Lectotype** 1 female (present designation): “Type / (BM red-rimmed type disc)” “Quop / W, Sarawak / G.E.Bryant / 21.iii.1914” and “G.Bryant Coll. / 1919-147” and “*Balaninus / imitator* Mshal. / TYPE female” and “*Curculio imitator* (Marshall) des. Pelsue 2009” (BMNH).

Syntypes: 1 female: “Para- / type (BM yellow-rimmed disc)” and “Quop / W. Sarawak / G.E.Bryant. / iv.1914” and “G.A.K.Marshall / Coll. B.M. 1950-255” and “*Balaninus / imitator* Mshal. / COTYPE”.

1 female, 1 male: “Quop / W. Sarawak / G.E.Bryant. / 23.iii.1914” and “G.Bryant Coll. / 1919-147”.

8 females, 2 males: “Quop / G.E.Bryant. / iii.1914” and “G.Bryant Coll. / 1919-147”.

8 females, 2 males: “Quop / W. Sarawak / G.E.Bryant. / iii-iv.1914” and “G.Bryant Coll. / 1919-147”.

1 female: “Quop / W. Sarawak. / iii.1914” and “G.A.K. Marshall / Coll. B.M. 1950-255”. 1 male: “Quop / W. Sarawak / G.E.Bryant. / 3.1914” and “G.Bryant Coll. / 1919-147”.

2 males: “Quop / W. Sarawak / G.E.Bryant / iii.1914” and “G.Bryant Coll. / 1919-147”.

1 female: “Puak, / Sarawak / G.E.Bryant. / 5.v.14” and “G.Bryant Coll. / 1919-147”.

1 female: “Puak, / Sarawak / G.E.Bryant. / 4.v.14” and “G.Bryant Coll. / 1919-147”.

Diagnosis: Male 3.0–4.0 mm long; derm piceous; rostrum continuous with frons, longer than half body length, longer in female, but not longer than body; pronotum with ventroanterior macula with lateral arms that reach to midpoint of eye and not visible in dorsal view, basolateral macula with median margin reaching elytral interval 5 meeting basal fascia of elytra forming V shaped fascia with piceous scutellum in middle; elytra with basal fascia from intervals 1–5, submedian fascia on intervals 1–9, with apical vittae along crosshatch setae in apical 0.25, all scales clavate, cretaceous, tightly packed; metafemur reaches or barely exceeds apex of elytra; venter clothed with cretaceous scales.

Differential diagnosis: This species closely resembles *C. analis*, but is smaller in size. The pronotal basolateral macula reaches elytral interval 5 whereas in *C. analis* it reaches interval 4. The metafemur barely exceeds the apex of the elytra, ventrite 5 lacks 2 tufts of apical setae, and the mesofemur has a basal fringe of long hair wanting.

Distribution: This species is found only on Malaysian Borneo: Sarawak, Quop and Puak.

***Curculio quincunx* (Marshall)**

Balaninus quincunx Marshall 1919: 386

Type material: Lectotype 1 female: “Sarawak, Quop / IV-1914 / Coll. G. E. Bryant / BMNH/ ‘Type / H.T.’ (BM red-rimmed type disc)” and “*Balaninus / quincunx / TYPE female Mshl.*” and “G.Bryant Coll. /1919 147”./ and “LECTOTYPE *Curculio quincunx* (Marshall) des. Pelsue 2009”. (BMNH)

Diagnosis: Female 4.5 mm long; derm piceous; rostrum continuous with frons, more than half body length; ventral pronotum with macula of clavate, cretaceous scales with lateral arms reaching midpoint of eye and not visible in dorsal view, basal margin with lateral macula, with median margin reaching mesepimeron, densely clothed with cretaceous scales; metasternum with posterior macula of cretaceous scales; elytral interval 4, scutellum piceous; elytra with 2 short vittae on interval 1 of cretaceous scales distad of scutellum, 3 small macula on intervals 2, 3, 7 in apical 1/3, two cretaceous vittae on interval 1 along crosshatch setae on apex; legs piceous, metafemur with small tooth; venter clothed with cretaceous scales.

Differential diagnosis: This species looks similar to *C. analis* and *C. imitator*, but can be distinguished from both species by the short median vittae on elytral interval 1 distad of scutellum and the 3 macula past the mid point on intervals 2, 3 and 7.

Distribution: Malaysian Borneo: Sarawak, Mt. Matang and Quop.

***Curculio sellatus* (Marshall)**

Balaninus sellatus Marshall 1919: 395

Type material: Neotype male: “Borneo, Sabah, TrusMadi 1900m / 200km ESE Cota [= Kota] Kinabalu / 20-24-V-1995 / UV light” and “J. Matsu & D. Bouchard / equator montane for.” and “NEOTYPE *Curculio sellatus* (Marshall) des. Pelsue 2005” (BMNH).

Other specimen: male same data as Neotype (CWOB).

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FIGURES 4. *C. quincunx*, male; (a) dorsal habitus; (b) lateral habitus.

Description: Male 3.6 mm long; 1.7 mm wide. Head with large punctures and well defined margins; glabrous; eyes round, finely faceted; frons 0.20 as broad as head across eyes with deep interocular foveae. Rostrum 2.8 mm long; 0.77 as long as body; derm piceous; thickened at base with narrow apex; continuous with frons; dorsally with fine narrow punctures, laterally above scrobe carinae with deep oval punctures from base to insertion of scape; straight to antennal insertion then slightly deflexed to apex; apex enlarged as broad as area of antennal insertion; scape inserted in basal $\frac{1}{2}$; scrobe ventral, scape reaching eye. Antennal scape 1.2 mm long; funicle 0.9 mm long; club 0.7 mm long; scape 1.3 longer than funicle; antennomere 1 twice as long as 2, 3 longer than 4, 4–5 same length, 6–7 same length broader than 5, antennomeres 5–7 with long, stiff, piceous bristles; club longer than antennomeres 2–7, antennomere 1 longer than 2, 1 three times as long as 7. Thorax 1.2 mm long, 1.5 mm wide; 0.8 as long as broad; derm piceous; base almost as broad as base of elytra,

lateral margins angled in straight line to constriction; disc with indication of median carinae, mostly glabrous with median basal macula of clavate, rubiginose scales and few clavate, white scales; slightly convex in lateral view; mesoventral intercoxal process not visible in lateral view, covered with short, narrow, white scales; scutellum small, round, clothed with rubiginose scales; mesepimeron, mesepisternum, metasternum clothed with clavate, rubiginose scales. Elytra with striae narrow, deep; shallow scutellar declivity; humeri rounded; intervals broad, 1–5 with vittae of clavate, rubiginose scales, intervals 6–8 with scattered scales, 9–10 with vittae from distal 1/3 to apex; crosshatched setae short, piceous, flat in lateral view. Metafemur with small tooth, reaching apex of elytra; pro-mesofemoral teeth very small; left proleg, left mesoleg and right metaleg present, remaining legs wanting; clothed with small, narrow, recumbent, white scales. Abdominal sternum I longer than II behind coxal cavity; sternum 2 as long as 3–4; sternum 5 longer than 3+4 with emarginated apex and lateral tufts of stout seta-like scales margining median declivity. Pygidium piceous with median transverse carinae and short piceous hair-like scales to apex.

Distribution: Malaysia: Borneo, Sarawak, Puak; Sabah: Trus Madi.

Differential diagnosis: This species could be confused with *Indocurculio nigromarginalis* (Heller) proposed new comb. Pelsue (2009) with fulvus scales, but *C. sellatus* has a distinctly different rubiginose scale pattern on the dorsum of the thorax and a longer rostrum.



FIGURES 5. *C. sellatus*, male, neotype; (a) dorsal habitus; (b) lateral habitus.

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FIGURES 6. *C. sellatus*, female, holotype; (a) dorsal habitus; (b) lateral habitus.

Acknowledgements

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